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APRIL 1989

ELECTRIC LIGHT & POWER

EL&P

Volume 67, Number 4
A PENNWELL PUBLICATION

VOICE OF THE ELECTRIC UTILITY INDUSTRY

Peach Bottom restarts?

PE agrees to state oversight, new operation guidelines

PHILADELPHIA—Philadelphia Electric Co. officials expect approval for Peach Bottom restart mid-month, after an agreement allowing an unprecedented expanded state oversight of the plant operations.

In return for the oversight, Pennsylvania agreed to withraw challenges to certain license amendments for Peach Bottom that were filed before the NRC and Third U.S. Circuit Court of Appeals.

One PE spokesman said the agreement was "to reestablish the public's trust and confidence," and characterized it as unique to the Peach Bottom nuclear plant.

The plant—closed by the NRC in May 1987 because of operators sleeping at the controls—has cost the company about $200 million in replacement power and other costs.

Encouraging news on improvements

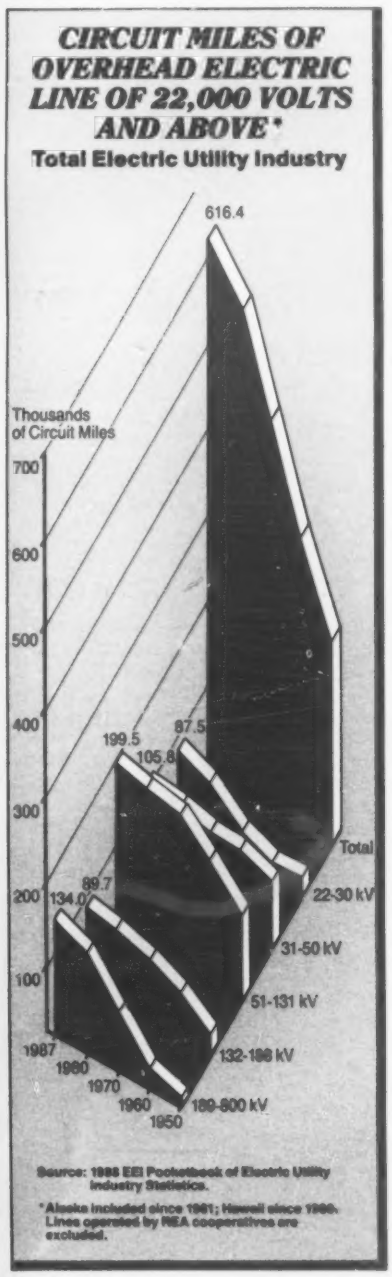
After reorganization of staff and procedures, and resignation of two officers, the company said it would wrap up technical details for restart by April 1. NRC Chairman Lando W. Zech Jr. toured the plant March 15 and was very favorably impressed, officials there said. Also, the Institute of Nuclear Power Operations, which previously scorched PE Peach Bottom operations, said in a letter the utility has been "responsive and effective" in meeting its concerns.

Stipulations of agreement

If the NRC approves the agreement with Pennsylvania, PE would:

- Allow the state access to confidential documents, including evaluation re-

Continued on page 13



Consumers Power follows interim PSC cogeneration order

JACKSON, MI—Consumers Power Co. told the Michigan Public Service Commission that it intends to comply with the recent interim order in the consolidated cogeneration case subject to satisfactory clarification of certain issues necessary to protect the interests of both the company's customers and shareholders (*EL&P*, March, p.1).

The utility also said that it is preparing contracts with cogenerators and small power producers, consistent with the MPSC's interim order, on the assumption that clarifications requested by the utility will be satisfactorily resolved.

In its filing, Consumers Power asked the MPSC to clarify five issues concerning the utility's interpretation of the interim order. Further, the utility asked for a rehearing on six additional issues if Consumers Power's interpretation of the first five issues does not meet the MPSC's approval.

Issues that need to be clarified include questions on the methodology for rate backloading, the utility's prudency risk, dispatchability terms, limitations beyond the present order on project size and fuel type, and use of the coal proxy for future electric capacity additions.

"Consumers Power is striving to make the interim order acceptable to its customers, shareholder and the community of Qualified Facility (QF) developers," the utility's filing said.

"If the MPSC can clarify outstanding issues in a satisfactory manner, the result will be a product that should encourage adequate QF city to meet the omers' electric s at a fair price to oncerned."

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LATE NEWS

The New Jersey Board of Public Utilities approved a credit of $37.7 million for customers of Public Service Electric & Gas Co. and Atantic City Electric Co. for the two-year shutdown of Peach Bottom. The credit assumes Unit 2 startup in May and Unit 3 startup in September. Further delays would lead to credits of $5 million per plant per month, the BPU said. See related story below.

Illinois Power Co. anticipates a decision by March 31 on its rate-hike request related to its Clinton nuclear plan.. What has been proposed by an Illinois Commerce Commission hearing examiner would have a "devastating" effect on the utility. See page 34.

PSNH's bankruptcy judge ordered all parties involved to reach a consensual reorganization plan by mid-May. See page 12.

WPL Holdings seeks to acquire MG&E for stock

MADISON, WI—WPL Holdings, the holding company formed by Wisconsin Power & Light Co., has announced that it has offered to acquire Madison Gas & Electric Co. The announcement was made by WPL Holdings chairman and chief executive officer James R. Underkofler.

An MG&E spokesman, Richard M. Lawrence, said the company on March 9 had received an offer to exchange 1.67 shares of WPL Holdings common stock for each share of MG&E stock in a tax-free transaction. MG&E Chairman and CEO Donald J. Helfrecht, said the company would study the proposal carefully and respond in due time.

Continued on page 13

Shoreham decision is likely

HICKSVILLE, NY—Mid-April is when the world may learn if $5.5 billion Shoreham nuclear plant will operate or be sold for one dollar to the state for decommissioning.

It also may be when the ratepayers and shareholders find out how much more the plant's going to cost them.

If the LILCo board approves state regulators' rate-hike/shutdown package April 15, shareholders would vote by proxy about mid-June.

Whether or not the plant operates, the company seems due for substantive rate increases. Fear about the ability to evacuate the island has entangled plant and owner Long Island Lighting Co. since long before the 1985 low-power license.

Here's how things stacked mid-March in this continuing saga.

New deal, same idea

Gov. Mario Cuomo proposed another shutdown plan Feb. 28, much the same as he proposed in June (*EL&P*, May, p.1). The new plan, however, did not require legislative approval and left ratemaking to the Public Service Commission. The legislature wouldn't approve the June plan because of the rate

Continued on page 12

Years of controversy about LILCo's $5.5-billion Shoreham plant may be close to resolution th

News Briefs

JILL MINNER, Assistant Editor

EIA says utility gas use may double by 2000

The United States may double its use of natural gas for electricity generation by the year 2000, according to a report by the Energy Information Administration. In its report, prepared for the House Committee on Energy and Commerce, EIA predicts that one-third of the growth in consumption will probably occur in generating units already in service, but not currently used to capacity. If gas-burning plants were retired by the end of their 30-year economic lives, or if they were converted to other fuels, economically recoverable gas would be adequate to meet consumption for electricity through the year 2030, the study revealed. However, EIA said that if the plants were not phased out additional gas resources would have to be produced beyond what is now considered economic to recover.

NEP picks gas pipelines

New England Power Co. (NEP) has chosen five interstate pipeline companies to transport natural gas from Canadian and domestic sources to its Brayton Point and Manchester Street generating stations. The company said it is acquiring the gas transportation in order to provide enough fuel for the increased demand for electricity in the New England region, and to comply with new environmental requirements in Massachusetts. "We believe that the five pipelines that NEP has selected will provide the company with economic and reliable routes for long-term supply of natural gas," stated NEP President John F. Kaslow. The five companies chosen are: Algonquin Gas Transmission Co.; Champlain Pipeline Co.; Tennessee Gas Pipeline Co.; ANR Pipeline Co.; and Columbia Gas Transmission in Ohio. The Canadian sources supplying natural gas to NEP include: Triton Canada Resources; Sceptre Resources Limited; BP Resources Canada Limited; and Renaissance Energy Ltd.

Vogtle-2 to begin low-power testing

The Nuclear Regulatory Commission Office of Nuclear Reactor Regulation granted a license to Georgia Power Co. for fuel loading and low-power testing at Unit 2 of its Vogtle nuclear plant. The license allows testing of up to five percent of full power, according to the commission.

Idaho Power involved in rebuilding projects

Idaho Power said it has reached an agreement in principle with the Twin Falls Canal Co. and the Northside Canal Co. on joint participation in the Milner Dam project. The companies plan to rebuild the 85-year-old dam and develop a hydroelectric project nearby. Under the agreement, the canal companies will receive funds from Idaho Power for reconstruction of the dam, and will repay the utility when the hydroelectric project is completed. A 44-MW power plant, to be built downstream from the dam, will be used to make falling water and royalty payments to the canal companies, according to Idaho Power. Reconstruction of the dam is scheduled to begin this October and finish in January 1991. An October 1990 starting date is planned for construction of the hydroelectric project, with completion expected in two years.

In related news, Idaho Power has asked the Federal Energy Regulatory Commission to approve the rebuilding of its Swan Falls powerhouse, the utility's oldest hydroelectric plant. The company said a recent study shows the structure must be rebuilt within the next five years to maintain safety and operational standards.

Rhodes is president, CEO at Virginia Power

James T. Rhodes became president and chief executive officer of Virginia Power on April 1, succeeding Jack H. Ferguson who has retired. In his 18-year career with the utility, Rhodes most recently served as senior vice president-finance.

Reilly to head EPA, support grows for agency status change

The Environmental Protection Agency has named William Reilly to replace Lee M. Thomas as administrator. Reilly is an environmentalist and former president of both The Conservation Foundation and the U.S. World Wildlife Fund.

In other news, the issue of raising EPA to a cabinet-level department is gaining support in both houses, according to the American Consulting Engineers Council. A bipartisan group of legislators plans to introduce the measure.

B&W nuclear fuel assembly achieves record at Oconee-1

B&W Fuel Co. announced that its Mark-B nuclear fuel assembly at Duke Power Co.'s Oconee Unit 1 has reached a record assembly-average burnup of 58,310 MWd/mtU. The previous record for a commercial light water reactor fuel assembly was set in 1988 by another B&W Fuel Co. assembly at Arkansas Power & Light Co., according to the company. B&W Fuel Co. is a partnership formed between Babcock & Wilcox and a French consortium of Cogema, Framatome, and Uranium Pechiney.

Mitsubishi Elec. buys WM Power Products

Mitsubishi Electric America, Inc. has acquired Westinghouse Electric Corp.'s WM Power Products, Inc., previously a joint venture of the two companies. WM Power Products supplies electrical transmission and distribution equipment, including power circuit breakers and gas-insulated substations, to the electric utility and industrial markets. Mitsubishi said a new office and manufacturing facility will be constructed in Pennsylvania for the company, which is currently located in Pittsburgh. WM Power Products' existing team will continue to manage its business in the United States and Canada, according to Mitsubishi.

IEEE passes 300,000 mark in membership

The Institute of Electrical and Electronics Engineers reported that it now has more than 300,000 members, over twice the size of the next largest engineering society. "Since the formation of the IEEE in 1963 from the merger of the American Institute of Electrical Engineers and the Institute of Radio Engineers, IEEE membership has grown from 154,000 to the present level, effectively doubling during the past 25 years. During this time, the Institute has added almost 146,000 new members to its rolls..." stated IEEE President Russell C. Drew. Members of the New York-based IEEE are involved in advancing the theory and practice of electrical, electronics and computer engineering, computer science and related arts and sciences.

NUS opens school for T&D instructors

NUS Training Corp. (NUSTC) has opened a school for transmission & distribution instructors, and will conduct its first 3-day session on April 18-20 in Gaithersburg, MD. The session, on distribution instruction, will show T&D instructors how to use NUSTC videotapes in their training environment, how to enhance presentation skills, and how to take full advantage of the training process. Subsequent sessions will deal with substation/switchyard and transmission instruction. NUSTC said its instructors school can also be brought onsite. For more information contact Sue Grove-Apple at 1-800-848-1717 or Mike Haley at 301-258-1891.

Rybel wins award for dewatering plan

The American Society of Civil Engineers has given its Thomas Fitch Rowland Prize to Vincent W. Rybel for his contributions to construction management and construction engineering. Rybel, a geotechnical engineer at CH2M-Hill Northwest, Inc., co-authored a paper describing a dewatering plan he helped to devise for the excavation of the Opal Springs Hydroelectric Project in Oregon.

Utility bills can soon be paid at 7-Eleven stores

Utility customers in 18 states will soon be able to pay their monthly bills at local 7-Eleven stores, according to the National Payments Network (NPN). A contract signed between NPN and The Southland Corporation of Dallas, operator and franchisor of 7-Eleven, allows NPN to install computer terminals in participating stores. Bill payments in the form of cash, check or money order will be accepted by store personnel who will then transfer the funds to the utility via the computer. "We believe offering our customers an opportunity to pay their utility bills is a great service for anyone who is in a hurry," said Southland Senior Product Manager Keith Jenkins. "And, customers who don't have checking accounts can simply bring cash. We offer the kind of flexibility that should make this program very attractive to everyone," he added.

Utilities fined by NRC

The Nuclear Regulatory Commission recently proposed the following fines:

Detroit Edison Co.
A $50,000 fine for violations of NRC safety requirements involving motor-operated valves at the company's Fermi nuclear power plant.

Duke Power Co.
A $37,500 fine for alleged violation of NRC requirements at the McGuire nuclear plant.

Florida Power & Light Co.
A $100,000 civil penalty for alleged violation of NRC security requirements at the Turkey Point nuclear power plant.

GPU Nuclear Corp.
A $50,000 fine for an alleged violation of an NRC operating license safety limit and for numerous violations of standard maintenance procedures at the Oyster Creek nuclear plant.

Wolf Creek Nuclear Operating Corp.
A $50,000 fine for allegedly violating NRC requirements in the operation of the Wolf Creek nuclear power plant.

Maine Yankee Atomic Power Co.
A $75,000 fine for several violations of NRC security requirements at its Maine Yankee Power Station.

In This Issue

Industry News

Madison Gas & Electric gets takeover bid. 1
Canadian power exports to the U.S. declined substantially last year. 3
Gas turbine performance hit new highs in 1988. 3
NARUC and APPA pass global warming resolutions at winter meetings. 7,29
Western Power Pool participants ask FERC for two-year extension. 8
16th Energy Technology Conference: How utilities should handle cogeneration. 19

T&D Technology

AM/FM must be integrated into a business system to work properly. 43
Pole inspection is key safety procedure, says Colorado REA exec. 48

What will be the "New Nuclear Era?" 65
New N-Plant designs promote simplicity. 68

Generation Technology

Fossil costs are down, nuclear's are up in new survey of generating costs. 37

1989 IEEE/PES T&D Expo

Show-In-Print. A preview of some of the newest products to be displayed at this year's show. 51

Regular Features

Commentary 4
Labor/Management Concerns 24
Information/Control Systems 28
Letters 30
Financial Performances 32
Calendar 33
Rate Activity 34
Readers' Service 71
New Products 73
New Literature 77
Regulatory Review 81
Management Methods 83

PacifiCorp's Gleason: merger was 'smoothest ever'

CHICAGO—The recent PacifiCorp/Utah Power & Light Co. combination was "perhaps the smoothest merger ever—certainly the best utility merger," PacifiCorp President Al Gleason told utility analysts recently.

An expanded and more flexible transmission system, broader customer base, larger capacity margins and efficiency savings "will make us a formidable cost-based force in the West," Gleason said at a meeting of the Utility and Telecommunications Securities Club of Chicago.

He repeated the savings of the merger, often-cited during the 17-months of proceedings: $50 million the first year, $500 million over five years and $160 million a year within five years. About 900 employees will be trimmed by attrition (*EL&P*, February, p.1).

Benefits already

Some benefits are already apparent. During the recent "Siberian Express" that stressed the Western grid, PacifiCorp made spot power purchases through the Utah system from Arizona and New Mexico utilities. Subsequent sales in California translated into "very pleasing news for the first-quarter" financial report, Gleason predicted.

He doesn't subscribe to any mass consolidation theories. Many advantages of the merger are specific and would not lead to a multitude of utility mergers, he said.

Transmission from Pacific Power & Light Co. is primarily east-west, while UP&L is mostly north-south, making the combination a dynamic intertie network, Gleason pointed out. The FERC transmission guidelines will have very small net effect on profitability of the merger, Vice President Rod Boucher stressed.

In fact, selling transmission capacity could be greater than what was outlined in the merger, Boucher said. The trend toward more access is actually healthy for low-cost producers like PacifiCorp, he explained.

With unrestrained excitement, he said: "We made a lot of money last year; this year, we'll make even more!"

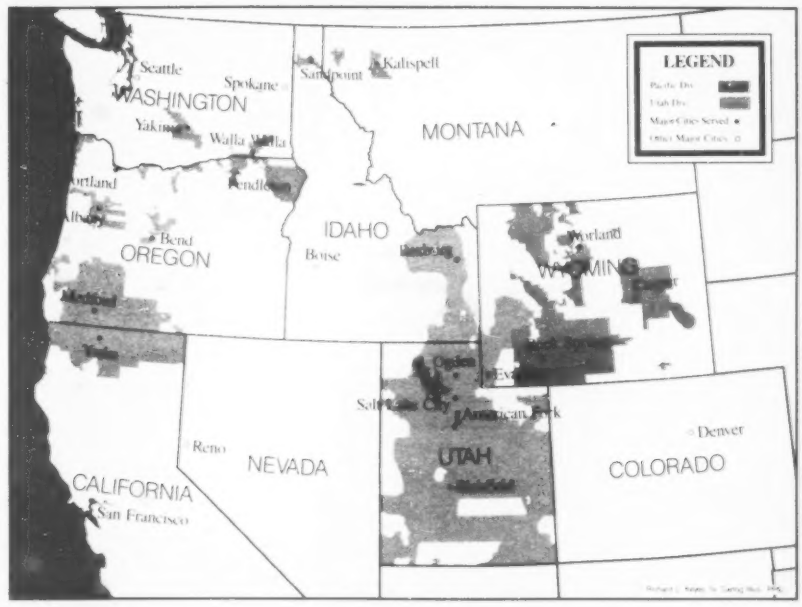
Year-end figures

PacifiCorp net fourth-quarter income was $447 million, up from $411 million in 1987. Earnings per share were $3.46, up 9 percent, despite a decline in EPS in the fourth quarter. Not including the merger, year-end EPS results were $3.85 compared to $3.60.

Together, the revenues from the electric divisions were up 4 percent to $2.2 billion as killowatthour sales increased 5 percent to 46 billion. Retail sales increased 6 percent; industrial customers accounted for the largest increase. Sales to other utilities were up 3 percent to over 8 billion kWh while revenue from this sector was 24 percent higher.

Pacific Power contribution to net fourth-quarter income was $49.2 million, down slightly from $51.0 million last year. The contribution to net year-end income was $169.2 million, up from $168.8 million.

Utah Power & Light net fourth-quarter income was $35.0 million, down from $39.8 million. The net year-end income was $160.6 million, up from $144.8 million.



1988 a record year for combustion of turbines

ALBANY, NY—Combustion-turbine plant performance hit record highs in 1988 according to a recent report published by Strategic Power Systems Inc.

Plant availability was up 4 percent over 1987 to 93.2 percent, while plant reliability increased 4 percent over 1987, to 99.2 percent in 1988. Service factor for combustion turbine plants also improved in 1988 to 33.2 percent, as compared to 30.3 percent in 1987.

SPS was founded in 1987 by former employees of General Electric Corp.'s gas turbine department and Digital Equipment Corp. The combustion turbine performance reporting program was initiated by GE in 1977 and was turned over to SPS, under an EPRI grant initially, in 1987.

The 1988 Year-End Report was generated from a combustion turbine operational and maintenance reporting system that contains over 1600 turbine years of operation and maintenance detail. The Operational Reliability Analysis Program data is segmented by turbine application and duty, allowing detailed comparisons. The table following represents the pooled results for all units above 50 MW, including utility, industrial and cogenerator plants.

The report shows that the Planned Outage Factor was highly variable, depending on plant duty and application. Peaking plants had an average Planned Outage Factor of 6.3 percent over the period 1977 to 1988. Cycling plants had an average of 11.4 percent over the same period, while baseload plants had an average of 11.6 percent. Continuous duty plants had an average Planned Outage Factor of 3.5 percent during the period 1985 to 1988. Data is not available prior to these years.

The report also shows that the Forced Outage Factor (FOF) remained fairly steady over the period 1977 to 1988, independent of plant duty and application. Peaking plant (FOF) averaged 5.2 percent for the period; cycling duty plants averaged 4.6 percent; and baseload plant averaged 5.0 percent. The best FOF was exhibited by continuous duty plants, which averaged 1.1 percent Forced Outage Factor for a shorter 1985-1988 period. The maximum difference in these FOFs represents 358 hours per year of forced unavailability.

Starting reliability

Plant Starting Reliability for the period 1977 to 1988 ranged from 91.4 percent in 1977 to 96.2 percent in 1988. Peaking-duty units had a starting reliability of 94.4 percent during the period, while starting reliability was 93.8 percent for cycling duty plants and 91.3 percent for baseload plants. Continuous duty plants averaged 84.6 percent for the period 1985 to 1988.

Critical factor

"Overall, these trends show that combustion turbines can provide equivalent levels of performance as traditional baseload steam units," says Salvatore DellaVilla, President of Strategic Power Systems. "This will be a critical factor in the years ahead as combustion turbines represent an increasing portion of the utilities' generation capacity."

Expansion

Strategic Power Systems is expanding its reporting to jet derivatives and a cross-section of turbine and equipment manufacturers. It also is working with the North American Electric Reliability Council to see if the same analytical system could be extended to broader performance data reported to NERC by electric utility organizations.

Plant performance comparisons

Parameter	'88 Result	'83-'88 Avg	'82 Result	'77-'82 Avg
Availability	93.2	89.0	84.0	83.4
Reliability	99.2	96.4	95.0	93.7
Starting reliability	96.2	95.1	94.4	92.8
Service factor	33.2	28.3	17.5	17.7
Forced outage factor	0.8	3.6	5.0	6.3
Planned outage factor	6.0	7.4	11.0	10.3
Fired hours per start	33.8	31.4	33.6	23.5

Canadian electrical exports fell in '88

MONTREAL—Exports of electricity to the U.S. from Canada fell 28 percent in 1988, the Canadian National Energy Board has reported to the Canadian Electrical Association.

The reduction is the result of strong domestic demand in Canada and the drought that reduced hydro output.

Other provinces that suffered reductions in electrical exports and the revenues they produce were New Brunswick, Ontario, British Columbia and Saskatchewan. Strong domestic demand, the result of Canada's economic recovery, and drought were instrumental in all cases, CEA said.

Canadian Exports to the U.S.

Province	1988	1987	% ±
Quebec	11,863GWh	16,401GWh	-27.7
British Columbia	8,851GWh	12,815GWh	-30.9
Ontario	7,438GWh	8,497GWh	-12.46
New Brunswick	5,191GWh	6,141GWh	-15.5
Manitoba	629GWh	3,461GWh	-81.8
Saskatchewan	57GWh	113GWh	-49.7
Total Canada	34,029GWh	47,427GWh	-28.3

Revenues from exports dropped 29 percent, from $1.2 billion in 1987 to $855 million last year. According to CEA, this is the first time since 1980 that revenues have slipped below $1.0 billion.

Canadian exports in 1988 were 34,029 GWh, down from 47,427 GWh a year earlier.

Manitoba big loser

The largest drop in export volume occurred in Manitoba, where a two-year drought has severely reduced water levels in impoundments behind hydro dams. Manitoba kilowatthour exports fell by 82 percent, while revenues tumbled 69 percent.

Quebec

Quebec, Canada's largest exporter of power to the U.S., exported 28 percent fewer kilowatthours of electricity in 1988 than a year earlier, which caused a revenue drop of 22 percent.

DOE awards $90-million contract for new N-design

SAN FRANCISCO—The Department of Energy awarded GE's Advanced Nuclear Technology Operation a three-year base contract for $46.7 million for an advanced conceptual design of a Liquid Metal Reactor (LMR) power plant.

The contract also allows for a two-year, $44.4-million option for preliminary design.

Efforts will focus on developing an economical, safe, and environmentally acceptable modular plant design, resolving licensing issues with the Nuclear Regulatory Commission and developing private-sector support to continue the detailed design and construction phases of the program.

Continued on page 6

COMMENTARY

The 1989 IEEE/PES T&D Expo: A look at tomorrow

As this April issue of *EL&P* is delivered to subscribers, many engineers and managers of the industry's transmission and distribution systems will be gathering in New Orleans for the opening of the Institute of Electrical and Electronic Engineers' 11th Transmission and Distribution Conference and Exposition. The gathering, sponsored by IEEE's Power Engineering Society, will be the biggest and most comprehensive yet.

It also promises to be the most important in the 25-yr history of the event.

As many as 14,000 are expected to attend the Conference, which will be launched with a keynote session that will define emerging trends and outline some of the major concerns facing the electric utility industry in the next decade. Registrants will be able to participate in more than 125 technical presentations, a tutorial, 28 panel discussions and special programs focusing on the opportunities (and problems) that will confront T&D engineers in the future.

Then they will have the opportunity to see the largest collection of new T&D equipment ever assembled. As of *EL&P* presstime, more than 418 manufacturers had signed up for more than 159,000 square feet of exhibit space. By opening day, April 3, those numbers should increase even more. Utility and architect/engineering participants will be able to see and discuss with supplier personnel the features and applications of more new products, equipment and systems than ever before.

There is no question, this event is *the* premier technical gathering for T&D people. It is especially important this year because of the increasing construction and maintenance activity going on today and the growing emphasis on improving productivity in system operations. The concentration of brainpower and experience focusing on real-world solutions to pressing technical problems, provided against the backdrop of new apparatus and equipment displays, offers unequaled opportunity to develop new insights into ways to cope with the challenges of the both today and tomorrow.

Some have questioned the frequency of the Conference and Exposition. Two-and-a-half years is an unusual time between major meetings. But such an interval allows for the initiation and completion of projects based on technologies and products introduced at one show, with the results to be reported at the next one. It allows adequate time for development and financing of product development by suppliers. Moreover, the frequency allows for spring and fall dates, which allows more open selection of location without the same weather constraints. In other words, it all works...and works well for *all* participants.

EL&P invites its reader-visitors to the T&D Conference and Exposition to stop by Booth 415 to chat with its editors. We'd like to talk with you, get your thoughts about the meeting and about anything else you'd like to discuss. But if you can't be in New Orleans, we'll report on the event in the May and June issues so you'll at least get some of the flavor.

It's true, the IEEE/PES T&D Conference and Exposition isn't held often. But it's really worth the wait.

Will one-stop licensing change the industry's nuclear future?

The probability of the Nuclear Regulatory Commission adopting new procedures providing for so-called "one-stop licensing" offers utilities hope that the nuclear option may be restored. But the process, which means that an operating license would go along with permission to construct a nuclear plant, is only a facilitating procedure. It would allow a utility to develop a time-sequence for operation, assuming construction and training meet constant inspection criteria, without the horrendous delays currently taken up by hearings and court challenges and attendant skyrocketing costs. But one-stop licensing won't change public perceptions of the dangers of nuclear power. And without changes in those perceptions, no utility is about to try to exercise its nuclear options.

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ELECTRIC LIGHT & POWER (USPS 858-860) is published monthly by the PennWell Publishing Company, 1421 S. Sheridan Road, Tulsa, OK 74112.

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Second class postage paid at Tulsa, OK. Subscription: $38 per year (U.S.), $66 (foreign), $108 (foreign air mail). Single issue price: $4 + postage ($7 + postage foreign). Copies of back issues are available on microfilm from Univ. Microfilm, 300 N. Zeeb Road, Ann Arbor, MI 48103, and on microfiche from Micro-Photo Div. of Bell & Howell, Old Mansfield Road, Wooster, OH 44691. POSTMASTER: Send address changes to ELECTRIC LIGHT & POWER, P.O. Box 2680, Tulsa, Ok. 74101.

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GUEST COMMENTARY

The arrogance of power

I like Charles Osgood. Many other people like this well-known and charming radio and print personality. In fact, it might be safe to say that of those that listen to him or read his columns, practically all like him.

But Charles Osgood and his parent radio organization, CBS News (and especially a minor functionary in that organization), may be just a bit overwhelmed by their own importance...as some people and organizations in *our* industry may have been, and may still be.

Osgood recently gave one of his commentaries that was directly related to the energy industry. It referred to a report from the National Oceanic & Atmospheric Administration that threw cold water onto all the recent hysteria about the onset of the so-called Greenhouse Effect. Not only did he comment on the Effect and the report, Osgood followed up with one of his clever and witty poems that so aptly put things into perspective.

We would have loved to reprint that poem, so you, our readers, could have shared in his funny insights. In point of fact, we made a valiant effort to do so. CBS News even graciously and swiftly answered our request, and rushed us a copy of the piece.

However, a warning on the copy stated, "No portion of it [the broadcast] may be broadcast, published, or reproduced in any form without the written permission of the CBS NEWS ARCHIVIST." (Their capitals, not ours.)

We had no problem with this requirement, so we immediately got on the phone and tried to contact this CBS NEWS ARCHIVIST, and ran into a wall. We were told that this important person was "not available at this time." So we left a message requesting that he please return the call.

After waiting a day, we called again. Same result. And again. And again. And then we faxed our request to him.

How many times have plain citizens or local media representatives ever called their electric utility, trying to find out some basic information about services or policies? And how many times have they been frustrated in these attempts?

In the northern Illinois area, one we are most familiar with, both citizens and media have run into problems in this respect in the past. The utility here often only spoke directly on certain broad and some specific issues with the public utilities commission, and not with anyone else. Many other electric utilities, in the past, acted the same way. The exclusive utility-commission connection was a cozy relationship that had worked for decades, so why change it?

In recent years, as rates have gone up, and up, and up again—whether reasonably or not—electric utilities have found that they darn well better start talking to private citizens and citizen's groups and the media.

Our 1988 Utility of the Year, General Public Utilities Corp., when asked what was the one most important lesson they learned from the accident at Three Mile Island, didn't hesitate to bypass every technical consideration and say that it was to *keep the public informed*!

Apparently, CBS News and its parent, the CBS network, may not yet have learned this valuable lesson.

CBS even virtually ignored one of its most valuable stars and shows, Angela Lansbury and "Murder, She Wrote," until almost too late, noted an article in *The Wall Street Journal*. (Somebody probably didn't return her calls, either.) When she expressed her frustration and intention of leaving at the end of the season when her contract ran out, the network suddenly found reasons to talk with her.

And all three of the major networks, not just CBS, have lost viewers, admits Howard Stringer, president of CBS Broadcast Group, because of poor programming. Maybe from not returning media and viewer phone calls, and thus missing out on valuable feedback.

Can we, in our own very public business, learn something about the value of answering inquiries with interest on our part? Perhaps.

Should we learn this lesson? You bet!

Henry Stein, Engineering Editor

CMP signs residential conservation pact

AUGUSTA, ME—Central Maine Power Co. signed a five-year, 6.5-MW, $5.1-million bid contract for conservation improvements in what is believed to be the largest residential "negawatt" purchase, covering 10,300 households.

SESCO Inc. of Springfield, MA, is to implement the 25-million kWh in conservation improvements.

The CMP-SESCO contract is the fifth major performance conservation bid project signed by CMP's 1988 "all-source" solicitation, touted as the nation's first.

To date, 12 utilities in New York, New Jersey and Vermont have submitted their own plans to conduct similar solicitations, CMP said. The Massachusetts Department of Public Utilities recently ordered all state utilities to evaluate and undertake such a process.

Under these performance bid contracts, utilities can purchase metered conserved energy and capacity (negawatts) at a price at or below the prices they would have to pay for the same energy and capacity from another utility, from outside power producers or from their own construction activities. Since utilities pay only for measured results and always at a price below their avoided costs, the programs are guaranteed to be cost-effective for the utility and ratepayers, CMP explained.

Bills cut by $2500 each

Over the life of the improvements, participants are expected to reduce their utility bills by $26.1 million in 1989 dollars, an average of $2500 each.

Savings will be measured at each CMP residence based upon before-and-after meter readings. Results are adjusted for weather, vacancies, changes in facility use, participation in other utility conservation programs, savings deterioration and natural conservation due to price increases. SESCO bears the cost of measurements (subject to CMP approval), inspections and installations.

Fossil plant costs down; nuclears are up

WASHINGTON—Variable production costs at U.S. fossil power plants declined or remained stable during the period 1983-87, but those at the country's nuclear power plants went up, noted a five-year cost report from Utility Data Institute (UDI).

The report contains data for 580 power plants filed by utilities with various federal agencies over the five-year period noted.

Numbers don't lie

During the five years, average variable costs per net megawatthour declined for coal-, oil- and gas-fired plants—primarily, it must be noted, due to fuel price decreases. Costs at coal plants went from $22.38/MWh down to $20.74/MWh. Gas plant costs went from $41.67/MWh to $28.94/MWh, and oil plants, from $52.70 to $37.43.

However, the average variable net cost of electricity produced by nuclear plants *increased* 35 percent over the same five years, from $16.14/MWh to $21.78. Note that, in spite of the increase, low fuel costs helped the nuclears retain their cost advantage in UDI's rankings of the top 100 plants with the lowest average variable production cost per net megawatthour of electricity produced.

Top 20 breakdown

Of the top 20 ranked by this cost criterion, seven were coal-fired, one gas-fired and 12 nuclear. Still in UDI's No. 1 spot was Rio Pecos, a 142-MW gas-fired plant in Texas with a five-year average rate of $4.56 per net megawatthour of electricity.

The components of the variable costs studied by UDI included fuel and operating expenses. Fixed expenses were not reported nationwide on a plant basis, so were not part of the analysis. These fixed expenses included depreciation, taxes, insurance, etc.

Come and get it

The report, *U.S. Steam-Electric Plants: Five-Year Production Costs 1983-1987*, is available for $395 from: Utility Data Institute, 1700 K St., NW, Suite 400, Washington, DC 20006.

Average Variable Plant Costs

Type Plant	1987	1986	1985	1984	1983
Coal Plants	20.74	21.61	22.58	22.34	22.38
Gas Plants	28.94	30.43	42.33	42.98	41.67
Oil Plants	37.43	33.99	52.82	55.26	52.70
Nuclear Plants	21.78	20.40	18.76	18.58	16.14

Lowest-cost Plants

Rk	$/MWh	Plant	Fuel	Cap'y
1	4.56	Rio Pecos	Gas	142
2	11.06	Young	Coal	673
3	11.23	Prairie Isl.	Ur	1186
4	11.31	North Anna	Ur	1956
5	11.38	Laramie Riv.	Coal	1710
6	11.46	Nine Mile Point	UR	642
7	11.91	Zion	UR	2196
8	11.95	Calvert Cliffs	Ur	1829
9	12.60	Maine Yankee	Ur	864
10	13.10	Big Brown	Coal	1187

High-cost Plants

Rk	$/MWh	Plant	Fuel	Cap'y
91	18.38	Cumberl'd	Coal	2600
92	18.38	Naughton	Coal	707
93	18.43	Turkey Pt.	Ur	1520
94	18.50	Johnsonv'le	Coal	1485
95	18.50	Coleman	Coal	480
96	18.53	Rush Island	Coal	1110
97	18.55	Paradise	Coal	2558
99	18.60	Muskingum Riv.	Coal	1530
99	18.63	Louisa	Coal	738
100	18.65	E.W. Stout	Coal	852

Cogeneration project combines economics and environmentals

JOHNSTOWN, PA—A $110-million cogeneration project to be built in Ebensburg, PA, will be fueled by waste coal. The project includes development, design, construction and operation of a 52-MW cogeneration plant to burn bituminous waste coal in a Babcock & Wilcox-supplied, circulating fluidized-bed (CFB) boiler.

Where production goes

Electricity from the plant will be sold to Pennsylvania Electric Co. (Penelec), and the steam will be sold to the Ebensburg Center State School and Hospital, and to other businesses in the Cambria County Industrial Park.

Where supplies come from

The waste coal will come from piles already stacked throughout the state. It is composed of refuse derived from spoils or reject material deposited from coal mining and processing operations. Approximately 10.5-million tons of it are scattered in the state.

The CFB boiler can burn the low-quality, high-sulfur coal refuse efficiently in an environmentally acceptable manner by using limestone as a sorbent to capture sulfur within the combustor.

Where ash goes

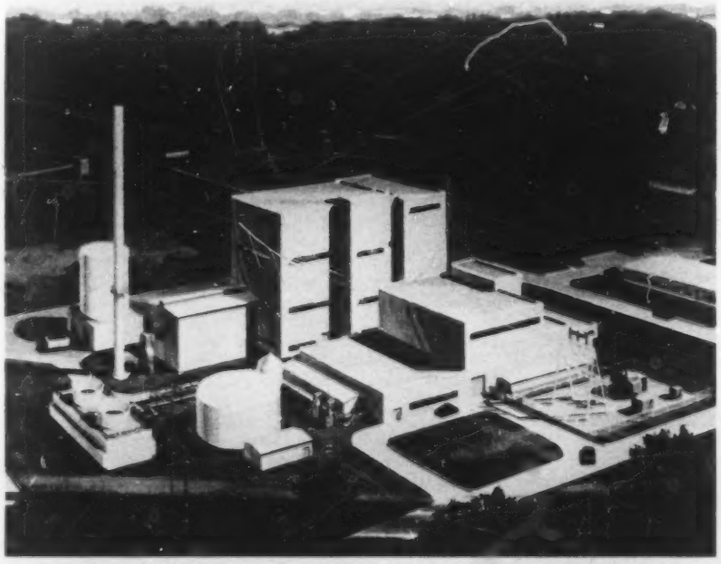
Ash from the plant will be put back into the coal refuse piles to aid in reclamation. Ash will be placed in alternate layers with the coarse, noncombustible leftovers. The ash will fill the pores of the coarse refuse to prevent refuse pile fires. The ash also will neutralize the acidic refuse to prevent acid drainage, and will make for a high campaction ratio that will minimize pile permeability.

Project construction is scheduled to begin in the spring, and startup is scheduled in early 1990.

Who's involved

Project developer is Babcock & Wilcox, and owner is Ebensburg Power Co., a Pennsylvania general partnership of B&W subsidiaries. Turnkey contractor is United Engineers & Constructors Inc. Project operator will be Power Systems Inc., another subsidiary of B&W.

Financing includes $82 million in tax-exempt support obtained through the Pennsylvania Energy Development Authority—PEDA issued $77.6 million in revenue bonds. Supplemental financing of $4.4 million was approved by the PEDA Board in October 1988. Swiss Bank Corp. is the agent bank acting as credit facility provider and Mellon Bank is the financial trustee.



Artist's rendering shows how the Ebensburg Cogeneration Project will look when it has been completed in western Pennsylvania and starts burning coal.

WMECO gets bids for 381 MW from cogens & IPPs

WEST SPRINGFIELD, MA—Eleven bids, representing 381 MW of capacity, were submitted to Western Massachusetts Electric Co. in February in answer to the utility's first solicitation for cogeneration and small-power production supplies.

Size ranges, fuels

Proposed projects ranged from 12 MW to 55 MW in size. Five of the proposals, totalling 263 MW, were to be fueled by natural gas. The other six, with a combined capacity of 118 MW, were to be powered by wood, coal or refuse.

The proposals were in answer to WMECO's October announcement that it was looking for 54 MW of additional capacity from cogenerators and independent-power producers (IPPs). WMECO opened the bids Feb. 3.

Evaluation factors

Five of the projects, representing 61 percent of the capacity offered, are located within WMECO's 59-town service territory. The other six are outside the territory but still in New England.

Bids were to be evaluated on the basis of price, fuel type, size, technology, location compatibility with existing WMECO system, and financial viability and security.

The utility expected to narrow down the 11 projects to a preliminary award group by early March. Final selections will be made later in the spring. All of the selected projects will be offered standard long-term contracts and are to be operational by 1994.

CG&E studies SO2 removal

CINCINNATI—Cincinnati Gas & Electric Co. got a $2.5-million grant from the Ohio Coal Development Office to help fund a pilot project to study advanced methods for removing sulfur dioxide from coal plant stack gases. The study will be conducted at CG&E's Miami Fort Station in North Bend, OH, and is expected to cost a total of $6.6 million.

More money from...

The balance of the funding is coming from the Dravo Lime Co. ($3.8 million) and the utility itself ($300,000).

The pilot plant is to be built next to Miami's Unit 7, which will supply flue gases from its discharge duct ahead of the stack.

The plant will use thiosorbic lime in a wet flue-gas desulfurization (FGD) process that is similar to that used at CG&E's East Bend Station.

Process goals

But CG&E is aiming for this process to cost 30-percent less to build and to use 50-percent less land space than similar FGD systems.

Some of the other objectives of the pilot plant study include investigation of removing nitrogen oxides with the process and developing alternative ways to dispose of FGD waste products.

Construction is scheduled to begin early this year and testing to start in August. Completion of testing is scheduled for August 1990.